

West Gulf RFC (originally known as the Fort Worth RFC)

The Fort Worth RFC was officially established in October 1961. The original staff was comprised of John McCallister (HIC), John Thomas (PA) and Jack Vochatzer (Engineering Technician. They were joined a month later by Caroline Reynolds (secretary). Others that worked at the Fort Worth RFC in the early years include hydrologists Victor Hoffman, Donald Close, Clarence Vicroy, Jack Teague, David Smith, Bob Ellis, Bob Theisen, Bobby Armstrong and Jim Elliott (computer operator).

Past Hydrologist-In-Charge were John P. McCallister (1961-1969), Victor Hoffman (1969-1977), Dave Morris (1977-1999), and Jerry Nunn (2000-2006). The current HIC is Tom Donaldson.

The RFC assumed forecast responsibility for the Fort Worth River District on December 1, 1962. This was the beginning of the RFC's operational forecasting. The area covered mainly the Trinity River Basin above Long Lake. The first actual flood forecasts were made in April 1963. The area of responsibility expanded over the next few years to include Colorado River below San Angelo, Guadalupe, Lavaca, and Nueces Rivers, as well as, water supply forecasting for the upper Rio Grande, Pecos and Arkansas rivers. Water supply forecasting for the Arkansas River would later be transferred to Tulsa RFC.

This RFC was the first river forecast center in the nation to have an on-site computer; the IBM 1620 computer was installed in April 1962. Over the next several months, Melvin Pierce, an Assistant Professor of Engineering Mechanics at Arlington State College, was hired as a consultant to write a large portion of the forecast program used in the IBM 1620 computer. John Cornish, Tulsa RFC, also helped with programming, programming some of the operational schemes, in particular, concerning API computations and transmission losses in routings. Walt Sittner, Office of Hydrology, developed a program to estimate missing rainfall for the RFC in 1964. He did this while attending an orientation program held in Fort Worth for visiting hydrologists from other river forecast centers.

Jack Vochatzer (MBRFC retiree) remembers the IBM 1620: The computer had the early version of the RIVALL program on it. Since it only had 8K of memory, we hired a professor from Arlington State College to write machine language in the FORTRAN. He would put pause statements in the program, and then use this space to insert the machine language. The computer was about 5 or 6 feet long and waist height. After getting a card print out, we would put the cards into a printer to print out the forecast. The printer was, also about 5 feet long. We had a tall wastebasket full to over full of cards daily. When we got the 16K, McCallister said we now have dual carburetors and four in the floor capability.

John "Mac" McCallister: What is left of my personal service records show that I came to the Kansas City RFC in February of 1950. That was when the

Southern Regional Office in Atlanta was closed; and the Hydrologic Section, Tony Polos went to Portland, Oregon as Chief of the new Columbia Basin RFC and I came to Kansas City. By the spring of the 1951 Kansas Basin floods, Bernice Ackerman, our first female hydrologist was on the staff. The record Missouri Basin snowmelt flood occurred in the spring of 1952. I remember many others during my stay in Kansas City; Earl Johnson, Robert Theisen, Lou Hahn, Charles Nevins and Herbert Thompson. When Archie Kahan departed, Ray Johnson became the HIC in Kansas City and I became the principal assistant. Besides the good life in Kansas City, I can remember river forecasts complicated by levee breaks and scouring river channels. I moved to Fort Worth in September 1961 to set up the West Gulf RFC. I was pleasantly surprised to discover that "Loop Rating" would not be a problem for the Fort Worth RFC.

Eric Anderson (HRL retiree) reflection on his 1964 orientation trip: Fort Worth was the first RFC to develop their own computer based forecast procedure (Portland had previously begun using the SSARR system developed and maintained by the COE). They used API rainfall-runoff computations and Lag and K routing. When I visited in 1964, the Fort Worth forecast procedures were being run on an IBM 1620 computer. The design and programming of the procedures were done with assistance from a professor at the University of Texas at Arlington. John McCallister was the HIC and I believe John Thomas was the deputy (later RH for the Eastern Region). Don Close was on the staff. Besides going over their procedures, Mac showed me the entire Fort Worth area and provided me with several meals and enjoyable evenings with his family. I also got my first taste of Texas barbeque. [I also visited Fort Worth again in 1965. By then Clarence Vicroy was the deputy I believe. With the use of the computer they were now able to develop unique API rainfall-runoff relationships for each river basin as opposed to the regional or RFC wide relationships used at the other RFCs. The data for a number of storms was read into the computer with a set of coefficients (equations had been developed for each quadrant of the API procedure – also unique at that time) and various statistics were generated. Then another set of coefficients could be tried to see if the results were improved or made worse. This procedure was continued until incremental improvement was minimal.

McCallister documented this computer program in a paper¹ published in 1963. Here is the abstract from this paper:

"This discussion outlines an operational river forecasting computer program, designated as tan initial step in digitalizing a forecast service. This model has been fashioned about accepted hydrologic techniques, and a minimum amount of input preparation.

However, the major goal of the model is to conserve as much

¹ "Role of Digital Computers In Hydrologic Forecasting and Analyses" by John PI McCallister, 1963, extract of Publication No. 63, International Association of Scientific Hydrology, Berkeley

continuity as possible between the forecaster and his forecast product.

The computer will provide a mathematically exact forecast computation: however, the inadequacies of the observational data and the hydrologic approximations and generalities remain. These meso- and macro-scale adjustments must still be provided by the experience level of the forecaster. It is essential that this intelligence be readily integrated into the computer product.

The electronic computer places unlimited degree of mathematical complexity and data analysis at the disposal of the forecaster. This sophistication can be introduced in any or the subroutines of the basic computer model, but should be limited by the experience level of the forecaster to insure a quality control of the Forecast product."